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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,345	04/19/2001	Bjorn Claesson	024444-913	7689

7590 07/22/2003

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,345

Applicant(s)

CLAESSON ET AL.

Examiner

Jennifer H Gay

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 11-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al. (US 5,890,552) in view of Yong et al. (US 6,460,636).

Regarding claims 3 and 4: Scott et al. discloses a roller cone drill bit that includes the following features:

- A support (see Figure 1 and col. 6, lines 5-23).
- A plurality of cone cutter (21, 23, or 25) rotatably mounted by bearings (see col. 6, lines 18-21) to the support.
- Rows of cutting elements (33, 43, and 53) are attached to the cutter. Each of the elements includes a body (100) that has a working portion, an opposing mounting portion, and an intermediate portion from which the working portion and the mounting portion extend (see Figure 6). The diameter of each element is the greatest at the intermediate portion and the greatest height extends between the tip of the working portion and a transition portion between the intermediate portion and the mounting portion.

Scott et al. discloses all of the limitations of the above claims except for the ratio between the height and diameter of the elements being less than 1.2.

In column 9, lines 15-25, Yong et al. teaches a cutting element with a $H/D < 1.2$.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the cutting elements of Scott et al. with an H/D less than 1.2 as taught by Yong et al. in order to have reduced the tensile stress on the element.

Regarding claim 5: Scott et al. discloses all of the limitations of the above claims except for the angle of the mounting portion being from 150° to less than 180°. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the mounting portion of Scott et al. so that its angle was from 150° to less than 180°, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 6: Yong et al. teaches that the height of the cutting element is less than 15 mm.

Regarding claim 12: As seen in Figure 1, Yong et al. teaches a cutting element that has a working portion that is convexly curved.

3. Claims 1, 2, 7, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott et al. (US 5,890,552) in view of Yong et al. (US 6,460,636) and Drake (US 4,595,067, cited by applicant).

Regarding claims 1, 2, and 7: Scott et al. discloses a roller cone drill bit that includes the following features:

- A support (see Figure 1 and col. 6, lines 5-23).
- A plurality of cone cutter (21, 23, or 25) rotatably mounted by bearings (see col. 6, lines 18-21) to the support.
- Rows of cutting elements (33, 43, and 53) are attached to the cutter. Each of the elements includes a body (100) that has a working portion, an opposing mounting portion, and an intermediate portion from which the working portion and the mounting portion extend (see Figure 6). The diameter of each element is the greatest at the intermediate portion and the greatest height extends between the tip of the working portion and a transition portion between the intermediate portion and the mounting portion.

Art Unit: 3672

Scott et al. discloses all of the limitations of the above claims except for the elements being adhered to the cutters by a metallurgical bond, i.e. welding, and except for the ratio between the height and diameter of the elements being less than 1.2.

In the abstract, Drake teaches a roller cone bit where the cutting elements are adhered to the cutter cones by welding.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have adhered the elements of Scott et al. to the cutters by welding as taught by Drake in order to have been substantially free of mechanical interconnections (see Abstract).

In column 9, lines 15-25, Yong et al. teaches a cutting element with a $H/D < 1.2$.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the cutting elements of Scott et al. with an H/D less than 1.2 as taught by Yong et al. in order to have reduced the tensile stress on the element.

Regarding claims 11 and 13: As seen in Figure 1, Yong et al. teaches a cutting element that has a working portion that is convexly curved.

Response to Arguments

4. In view of applicant's amendment the objections to the drawings and the 35 U.S.C. 112.2 rejection of claim 4 has been withdrawn.

5. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

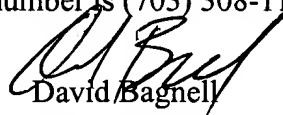
Conclusion


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

Art Unit: 3672

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


David Bagnell
Supervisory Patent Examiner
Art Unit 3672

JHG 
July 14, 2003